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EXAMINER	
PHAM, HAI CHI	
ART UNIT	**PAPER NUMBER**
2861	

DATE MAILED: 01/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/657,128	SASAKI, YOSHIHARU	
	Examiner	Art Unit	
	Hai C. Pham	2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 October 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *09/09/03 (updated)*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

FINAL REJECTION

Claim Objections

1. Claims 1 and 4 are objected to because of the following informalities:

Claim 1:

- The following limitation "modulating and controlling a laser beam like an image" should read --modulating and controlling a laser beam based on an image data--.

Claim 4:

- The following limitation "a plurality of glass substrates are fixed onto the cylindrical support member" should read --a plurality of glass substrates are subsequently fixed onto the cylindrical support member-- since the transfer sheets are superimposed on the same and single glass substrate in repeating steps to form a color filter, which each consists of a single glass substrate.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

3. Claims 17 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 17:

- The following limitation "the radius of curvature of the cylindrical support member is set when the glass substrate is wound" (emphasis added) appears to be misleading in that it indicates that the radius of curvature of the cylindrical support member is adjustable and that the radius *is determined at the time* when the glass substrate is ready to be wound around the cylindrical support member. Such statement is not supported by the disclosure at page 11, lines 21-22:

  "A radius R of a drum is to be set for winding to be carried out such that a glass is not broken."

  In other words, the radius of curvature of the cylindrical support member has to be determined in advance such that the winding of the glass substrate around the cylindrical support member would not cause the glass substrate to break.

Claim 18:

- Similarly, the following limitation "the radius of curvature of the cylindrical support member is set when the glass substrate is wound" (emphasis added) appears to be misleading in that it indicates that the radius of curvature of the cylindrical support member is adjustable and that the radius *is determined at the time* when the glass substrate is ready to be wound around the cylindrical support member. Such statement is not supported by the disclosure at page 11, lines 21-22:

  "A radius R of a drum is to be set for winding to be carried out such that a glass is not broken."

In other words, the radius of curvature of the cylindrical support member has to be determined in advance such that the winding of the glass substrate around the cylindrical support member would not cause the glass substrate to break.

The limitations as recited in claims 17-18 are so unclear that it is impossible to ascertain the nature of the claimed limitation.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawada et al. (U.S. 6,213,020) in view of Verlinden et al. (U.S. 5,871,879).

Kawada et al. discloses an image recording apparatus and method comprising a cylindrical support member (cylindrical recording drum 1) rotating in the primary scanning direction (as indicated by arrow A in Fig. 1) and on which is fixed a recording plate (100), a laser recording head (8) moved in an axial direction of the drum in the sub-scanning direction (direction indicated by arrow B in Fig. 2), the laser diode (81) being modulated and controlled by the laser diode driving circuit (110) to form an image on the recording plate. With regard to claim 5, although Kawada et al. does not explicitly discloses a tray or cassette for housing the printing plate, it is inherent to any printing

system to be provided with a housing cassette or magazine for holding the new printing plates for delivery to the printing station when needed.

Kawada et al. teaches the recording plate (100) being made of aluminum as a recording material, and thus fails to teach the image being recorded on a glass substrate, wherein the curvature radius of the cylindrical support member is set within a bending permissible stress of the glass substrate, and the radius of curvature of the glass.

Verlinden et al. discloses a printing machine for forming a color filter for an LCD by forming an image pattern on a recording material, which comprises a layer on a glass support capable of being unwound and wound from a supply roll. Verlinden et al. further teaches that the glass support can be directly clamped on the surface of a printing cylinder (col. 8, lines 45-53).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the recording material as a layer coated on a glass substrate in the device of Kawada et al. as taught by Verlinden et al. The motivation for doing so would have been to provide a wear-resistant photographic material as suggested by Verlinden et al.

With regard to claims 2, 3 and 6, Verlinden et al. further teaches that the glass support being wound on the supply roll or on the printing cylinder within the failure stress of the glass, and that the radius of the core on which the glass support is wound is determined based on the failure stress and the thickness of the glass support, i.e., the

diameter of the wound core can be 2 m when the glass support has a failure stress is 2 x 10^7 Pa and a thickness of 600 μm (col. 12, lines 57-60).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the support printing cylinder of Kawada et al. with an appropriate radius of curvature to be determined within the bending permissible stress of the glass substrate as taught by Verlinden et al. The motivation for doing so would have been doing to allow the glass substrate to be mounted on the printing cylinder without being broken. Although Verlinden et al. does not disclose the radius of the cylinder support being 1.39 m or more, it would have been obvious to one having ordinary skill in the art at the time the invention was made to set the radius of the cylinder support at 1.39 m or more, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawada et al. in view of Verlinden et al., as applied to claim 5 above, and further in view of Vogelgesang et al. (U.S. 5,342,682).

Kawada et al., as modified by Verlinden et al., discloses all the basic limitations of the claimed invention except for the cylindrical support member being formed with a plurality of discs arranged in an axial direction.

Vogelgesang et al. discloses a rotable recording drums comprising a plurality of discs (drum sections 12) arranged in the axial direction (Figs. 1A-1B).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the recording drum of Kawada et al. with a plurality of drum sections or discs as taught by Vogelgesang et al. The motivation for doing so would have been to provide a sturdy drum body.

7. Claims 9-11 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawada et al. in view of Verlinden et al., as applied to claims 1 and 5 above, and further in view of Yamane et al. (JP 62-075602).

Kawada et al. discloses all the basic limitations of the claimed invention except for the transfer sheet being superimposed on the glass substrate and the laser recording head exposing the transfer sheet to cause image transfer from the transfer sheet onto the glass substrate, and for repeating the same step for forming a plurality of colors on the glass substrate.

Yamane et al. discloses forming a color filter by overlaying a transfer sheet (dye film layer 6 provided on a base sheet 4) over a transparent base plate (3) made of glass (e.g., silica), exposing the transfer sheet with laser light to transfer the dye in the dye film layer 96) to the transparent base plate, the procedure being repeated corresponding to the number of necessary colors as required by the color filter (see Abstract).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use the dye transfer sheet in the device of Kawada et al. as taught by Yamane et al. The motivation for doing so would have been to provide a

color filter having high heat resistance and high weather resistance as suggested by Yamane et al.

8. Claims 12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawada et al. in view of Verlinden et al., as applied to claims 1 and 5 above, and further in view of Haijima et al. (U.S. 5,456,175).

Kawada et al., as modified by Verlinden et al., discloses all the basic limitations of the claimed invention except for the roller for pressing and fixing the glass substrate on the cylindrical support member.

Haijima et al. discloses a printing apparatus comprising a printing sheet winding device (251) having a pair of printing sheet press fitting rollers (257) for pressing and fixing the printing sheet (1) onto the surface of the printing drum (30) (Figs. 66-67).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the of printing sheet press fitting rollers in the device of Kawada et al. as taught by Haijima et al. The motivation for doing so would have been to guide and fixedly mount the glass substrate onto the surface of the cylindrical support member.

Response to Arguments

9. Applicant's arguments filed 10/28/05 have been fully considered but they are not persuasive.

The applicants argued that Verlinden et al. "fails to offer any teaching or suggestion that the glass substrate is wound on a drum within the bending permissible stress". The examiner respectfully disagrees. Verlinden et al. teaches that the glass substrate is either delivered to the printing station as unwound from a small supply roll or as being clamped on a small printing cylinder (col. 8, lines 45-53). Verlinden et al. further discusses the radius of the curvature of the supply roll and the printing cylinder being determined based on the specific failure stress of the glass substrate as well as the thickness of the glass substrate so that the glass substrate can be wound on the cylinder without being broken. Verlinden et al. provide a typical example wherein a "classical glass support having a failure stress (under tensile stress) of $2x10^7$ Pa and a thickness of 600 μm can only be wound on a core with a diameter of 2 m" (col. 12, lines 57-59).

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on (571) 272-1934. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hai Li Pham

HAI PHAM
PRIMARY EXAMINER

December 30, 2005